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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jiming Sun

Title: RING POINTING DEVICE

Docket No.: 884.334US1

Filed: November 27, 2000

Examiner: Amr Awad



Serial No.: 09/722,996

Due Date: December 6, 2005

Group Art Unit: 2675

MS Appeal Brief - Patents

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Customer Number 21186

By: Ann M. McCrackin

Atty: Ann M. McCrackin

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(GENERAL)



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Jiming Sun	Examiner:	Amr Awad
Serial No.:	09/722,996	Group Art Unit:	2675
Filed:	November 27, 2000	Docket No.:	884.334US1
Title:	RING POINTING DEVICE		
Assignee:	Intel Corporation	Customer No.	21186

APPELLANT'S REPLY BRIEF UNDER 37 C.F.R. § 41.41

Mail Stop Appeal Brief - Patents
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This brief is presented in response to the Examiner's Answer, dated October 6, 2005, which was sent in answer to Appellant's Brief, filed on May 23, 2005. Appellant's Brief on Appeal was filed in response to the final rejection of pending claims 1-30 of the above-identified patent application.

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APPELLANT'S REPLY

The Examiner's Answer Brief ("the Answer"), dated October 6, 2005, includes substantially identical grounds for rejection as the last Final Office Action. The Appellant has reviewed the Answer, and believes the statements in the original Appeal Brief remain accurate and compelling.

In responding to the Answer, the Appellant will further discuss two issues raised in the Answer. First, Appellant will show that the references themselves do not support the Examiner's reasons for combining the references. Next, Appellant will show that the cited combination does not teach or suggest all the elements of the rejected claims.

THE REFERENCES THEMSELVES DO NOT SUPPORT THE EXAMINER'S REASONING

In the Answer and throughout prosecution, the Examiner has rejected Appellant's claims based on the combination of Wang and Liao. The Examiner admits that Wang does not teach a plurality of sensors.¹ However, the Examiner asserts that one of ordinary skill in the art would have modified Wang's single sensor to include Liao's plurality of sensors in a circular pattern "to increase the conductivity of the pointing device."² The Examiner further states, "the Examiner simply shows that by providing multiple sensors... the sensing accuracy increases because the conductivity has increased."³

Appellant submits that the references themselves contract the Examiner's reasons for combining Wang and Liao. According to the Examiner's statements (see directly above), adding more sensors leads to greater conductivity and greater sensing accuracy. However, Liao teaches advantages of *reducing* the number of sensors on a pointing device. In particular, Liao describes

¹ See *inter alia* the Answer at page 4.

² *Id.*

³ The Answer at page 8.

disadvantages associated with using *four sensors* on a pointing stick.⁴ Liao overcomes the cited disadvantages by devising a pointing stick that includes only *three sensors*.⁵ Thus, Liao's teaching to reduce sensors on a pointing device is in direct conflict with the Examiner's reasoning⁶. Instead of adding more sensors, Liao reduces the number of sensors on a pointing device. Based on Liao's teaching, one of ordinary skill in the art would not be motivated to modify Wang's single sensor design by adding more sensors.

In addition to the discussion above, there is nothing in the record that would lead one of ordinary skill in the art to increase conductivity of a pointing device. The Examiner asserts that Liao's passage at column 1, lines 54-57 provides motivation to increase conductivity in a pointing device, thus providing motivation for combining Wang and Liao. Liao's passage states, "The sensor 322 consists of two electrodes 3222, 3223, a strain gauge 3221, and a conductor 3224, which increases the conductivity."⁷ However, this passage merely restates the well-known concept that conductors increase conductivity. Liao does not describe how increased conductivity is beneficial or how increased conductivity affects sensors. Without such information, there is no motivation for one of ordinary skill in the art to increase sensor conductivity, much less a motivation for combining Wang and Liao.

THE REFERENCES DO NOT TEACH ALL THE CLAIM ELEMENTS

Appellant submits that the cited references do not teach each and every element of each rejected claims. Appellant submits that the cited combination does not teach or suggest the claimed pointing device including "a controller adapted to create position information based on activation of one or more of the plurality of sensors."⁸ In rejecting claim 1, the Examiner asserts

⁴ See Liao at column 1, line 52 to column 2, line 14.

⁵ See Liao at column 2, lines 63-64.

⁶ The conflict between Liao and the Examiner's reasoning is particularly important because the Examiner explicitly relies on Liao to provide motivation for the cited combination (see the Answer at page 7, last paragraph).

⁷ Liao at column 1, lines 54-57.

⁸ Instant Application at claim 1.

that “[i]t is clear from the cited passage and figure 4 that a controller (processor 42) is used to create [sic] signal received from the sensor (16) (two dimensional sensor described in col. 7, lines 6-15) and then transmitted to the transceiver.” (Insertion added.)⁹

Appellant submits that the cited portions of Wang do not teach or suggest the above-quoted claim features. In particular, Wang's Figure 4 makes no indication of a pointing device controller adapted to create position information. Furthermore, the cited passage at column 5, lines 25-35 is off-base. Appellant submits that the cited passage discloses an A/D converter for transforming analog signals to digital signals and transmitting them to a processor. However, it does not teach or suggest the claimed pointing device “controller adapted to create position information based on activation of one or more of the plurality of sensors.” As for Wang's processor 42 of Figure 3, Wang describes it as:

- receiving digital signals from an A/D converter (Col 5, Lines 25 and 26)
- being a microprocessor or an ASIC (Col 5, Lines 29-34)
- being connected to memory (Col 5, Lines 36 and 37)
- containing a software state machine which monitors signals received (through transceiver 48) from various devices (for example a smart pill bottle), changes the current state if necessary, and generates commands based on the received signals and the current state of the state machine (Col 5, Lines 57-65)
- communicating with a temperature sensor and a pressure sensor (Col 6, Lines 6 and 7)
- providing for a self-learning or programming mode so that the universal interface device may adapt to various new or pre-existing electronic devices (Col 6, Lines 22-24)

However, Wang is silent about the processor 42 creating position information. Thus, Wang's processor 42 simply transmits the signals it receives from its A/D converter to the desktop

⁹ The Answer at pages 8 and 9.

computer 84. From Wang, it is clear that Wang's pointing device does not teach or suggest the claimed pointing device controller, as Wang's desktop computer 84 performs operations for positioning the screen pointer.

Claim 1 also recites, "wherein each of the plurality of sensors can be activated for positioning the pointer on the display screen." In discussing Appellant's Appeal Brief, the Examiner states, "Appellant cited only a portion of the portion cited by the Examiner. The passage clearly shows using the sensor to position the pointer on the display screen."¹⁰ Appellant did not attempt to mischaracterize Liao by quoting only a portion of the Examiner's cited passage. Instead, Appellant quoted the most relevant portion, while summarizing the remainder of the passage. The entire passage is quoted below:

Based on the assembly requirement, the substrate 41 may be in a corresponding suitable shape. We use a T-shaped substrate in the following as an embodiment. In order to assemble the substrate 41 to the keyboard baseplate (not shown), multiple of female screws 411 are provided. A plurality of sensors 422 are formed over the circular surface of the stick 42. As a preferred embodiment, three sensors 422 are used and each sensor 422 is spaced from another adjacent sensor by 120 degrees. The sensor 422 consists of two electrodes 4222, 4223, a strain gauge 4221 and a conductor 4224, which increases the conductivity. One end of the stick 42 is vertically disposed with respect to the substrate 41 and connected to the substrate 41 using a conventional approach.

In an alternative embodiment, the stick may include a portion of cylinder and the rest portion is in form of other cross-section type. For instance, a rectangular cross-section type. Nevertheless, sensors are still disposed over the circular surface of the cylinder portion.

As shown in FIG. 5, the stick 42 may be an element separate from the substrate 41 and connected to the substrate 41 through engagement of the hole 511 and the corresponding positioning projection 522. Alternatively, the pointing stick may also be formed integrally to include the stick 42 and the substrate 41.¹¹

10 The Answer at page 10.

11 Liao at column 2, line 57 *et seq.*

Even when the passage is quoted in its entirety, the passage does not support the Examiner's assertion that the passage "clearly shows using the sensor to position the pointer on the display screen."¹² In fact, the passage does not teach or suggest any of the features of claim 1.

¹² The Answer at page 10.

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CONCLUSION

Appellant respectfully submits the claimed invention is patentable over the cited art.
Reversal of the claim rejections is respectfully requested.

Respectfully submitted,

Jiming Sun

By his Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER &
KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 349-9592

Date Dec. 6, 2005

By Ann M. McCrackin

Ann M. McCrackin
Reg. No. 42,858

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Amy Moriarty

Name

Signature